

flumes replaced with metal or concrete, so that to-day the large irrigation systems of the Province are good examples of hydraulic structures. Owing to the generally rugged topography, irrigation engineering has been faced with many difficult problems, so that, compared with other parts of the world, many interesting features will be found which are peculiar to the varied topography that had to be traversed. The generally prevalent condition of agricultural development following, of necessity, the rather narrow valleys does not lend itself to simple and cheap irrigation systems.

Due to the wide variation in climate and soil types found throughout the Province, three methods of irrigation are in use. Sprinkling is practised in fairly humid areas, where the precipitation is moderate but insufficient during the growing period, also on heavy soils, and on rough topography. In the dry areas delivery by ditch or flume and distribution over the ground by furrows is general for fruit and vegetable crops. Irrigation by flooding is common in stock-raising areas on hay meadows. Most of the irrigation is by gravity supply, but pumping from lakes and rivers is also practised. In general, pumping is a more costly method and only warrantable in favoured areas for the growing of high-priced specialty crops. Any general reduction in power pumping rates would probably induce increased irrigation by pumping.

Irrigable and Irrigated Lands.—Estimates of the area of irrigable and irrigated lands of the Province are only approximate, as in the case of the former no over-all complete survey has ever been made, and in the latter case apart from the organized irrigation districts and companies for whom records are available, there are hundreds of individually irrigated farms and ranches for which no exact figures exist. The best estimate of irrigated lands in the Province is 150,000 acres, but approximately 35,000 acres of this are inadequately irrigated. The provision of additional storage dams and the improvement of conveying works to reduce seepage losses would provide water for much of this land. An additional 85,000 acres are under water licence and capable of being irrigated. A large proportion of this area will be under irrigation by individual effort by the time the works called for under the licences are completed in the next few years. In addition, there are some 200,000 acres which could be brought under irrigation, but at a cost greater than that of existing works.

Table 45, based on the best available figures, shows the irrigable and irrigated areas at present under the control of public and private organizations.

45.—Major Irrigation Projects in British Columbia, 1946

Project	Water Supply	Irrigable Area	Irrigated Area	Locality
		acres	acres	
Provincial—				
Southern Okanagan	Okanagan River	5,000	4,200	Okanagan Valley
Municipal—				
Penticton Municipality	Penticton and Ellis Creeks	2,500	2,300	Okanagan Valley
Summerland Municipality	Trout and Eneas Creeks	3,800	3,400	" "
Irrigation Districts—				
B.C. Fruitlands Irrigation District	Jameson Creek and Thompson River	3,000	2,800	Thompson Valley
Black Mountain	Belgo Creek	4,000	3,850	Okanagan Valley
Cawston	Similkameen River	500	257	" "
East Creston	Arrow Creek	1,400	1,160	Kootenay Valley
Ellison Irrigation District	Kelowna Creek	687	687	Okanagan Valley
Girouard	Swan Lake Creek	110	110	" "
Glenmore	Kelowna Creek	2,000	1,946	" "
Grand Forks	Kettle River	2,700	2,200	Kettle Valley
Heffley	Heffley Creek and North Thompson River	2,700	1,633	North Thompson
Kaleden	Marron Creek	500	430	Okanagan Valley